



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,355	11/14/2001	Jackie Y. Ying	M00925/70109 TJO	5789

23628            7590            09/10/2003  
**WOLF GREENFIELD & SACKS, PC**  
FEDERAL RESERVE PLAZA  
600 ATLANTIC AVENUE  
BOSTON, MA 02210-2211

EXAMINER
----------

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
----------	--------------

1712

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/993,355	YING ET AL.
	<b>Examiner</b> Daniel S. Metzmaier	<b>Art Unit</b> 1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 16 June 2003.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-19, 53 and 56-58 is/are pending in the application.
- 4a) Of the above claim(s) 53 and 56-58 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-19 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)      4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)      5) Notice of Informal Patent Application (PTO-152)  
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.      6) Other:

**DETAILED ACTION**

1-19,  
Claims ~~122, 26, 33, 35, 39~~-53 and 56-58 are pending.

***Election/Restrictions***

1. This application contains claims 6, 14, 53 and 56-58 drawn to an invention nonelected with traverse in Paper No. 8. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 7 and 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by El-Shall et al, US 5,580,655, as evidenced by Hawley's Condensed Chemical Dictionary, page 1038. El-Shall et al (abstract; column 3, lines 31-40; and claims) discloses nanoparticulate (5-50 nanometers (nm)) silica having high surface area (> 300 m<sup>2</sup>/g). Silica has a melting point of about 1700°C. The property of retaining the surface area would have been inherent since the temperatures recited in the claims are well below the melting point of silica. Silica reads on the claimed oxides of a metalloid or oxide of a semimetal set forth in claim 7.

Hawley's discloses the melting point of silica as about 1700°C.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5, 7-10, 12-13 and 15-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ricoh KK, JP 03-069506, as evidenced by Derwent Abstract, AN- 1991-129609, and JPO abstract, JP403069506. Ricoh KK (abstracts) discloses multiple metal oxide superfine grains. Ricoh KK (Derwent Abstract) discloses a water-in-oil (w/o) microemulsion comprising a NP-6 (nonylphenol with 6 ethylene oxide units) combined with barium alkoxide/titanium alkoxide in propanol. Ricoh KK (JPO)

Art Unit: 1712

abstract and figure 2) discloses particle diameters of less than 1000 angstroms, which equates to less than 100 nm.

The physical property of surface area would have been expected to be inherent to the materials produced in Ricoh KK reference since the materials are otherwise the same and are made the same as instantly claimed having the particles size claimed. Ricoh KK employs the same or substantially the same methods of making the compositions and would have been expected to produce materials having the same or similar surface areas. Ricoh KK (Derwent Abstract) discloses the microemulsions may employ alkanol and the alkoxides are dissolved in 2-propanol. 2-propanol would have been expected to be miscible with at least the continuous phase employing alkanol.

To the extent the surface area differs from that claimed, said property is based on not only the materials and particle size but the method of making said materials. Since the materials, particle size and method of making said materials read on the compositions claimed, the properties would have been expected to have been the same or similar. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the properties for the art known utilities of in ceramics.

***Allowable Subject Matter***

7. Claim 11 limited to the barium hexaluminate would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

8. Applicant's arguments filed June 16, 2003 have been fully considered but they are not persuasive.

9. Applicants (page 3) assert the El-Shall reference teaches agglomerated particles. The instant claims do not exclude agglomerated particles.

Applicants (page 3) assert the El-Shall reference does not disclose the silica particles retain a surface area of at least about 100 m<sup>2</sup>/g when heated to 700°C for at least about 10 minutes. Applicants' argument is based on the fact that heating to 600°C forms the agglomerates and results in a sintered material. This has not been deemed persuasive since the skilled artisan may merely look to the abstract to conclude the agglomerates are disclosed as having a surface area of greater than 300 m<sup>2</sup>/g. There is no evidence supporting applicants assertions of sintering above 600°C and such would not be expected for the materials since the materials are heated under a dynamic vacuum, which would be expected to avoid sintering to obtain the web-like structure of the agglomerates.

10. Applicants (pages 3 and 4) assert that due to the poor translation nature of the abstracts, they are unable to determine the method the materials are made and the physical properties of the materials formed. This has not been deemed persuasive since the materials Ricoh materials are made by a sol gel process in a reverse emulsion from alkoxides to form nanoparticles of complex oxides of barium titanates. See applicants instant examples 1 and 2 directed to sol-gel formation of barium aluminate in reverse emulsions employing alkoxides.

Art Unit: 1712

Furthermore, attention is directed to claims 9 and 10 wherein complex metal oxides are set forth including titanates.

Furthermore, the barium titanates are known in the art to have a melting point of 3010°F.

***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

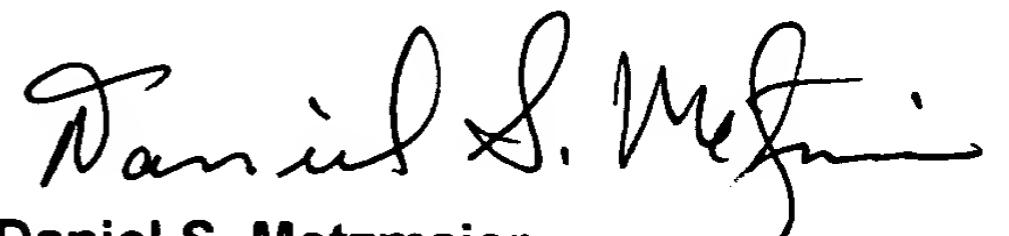
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on (703) 308-2340. The

Art Unit: 1712

fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



**Daniel S. Metzmaier  
Primary Examiner  
Art Unit 1712**

DSM